

SINGLE-USE PAPER PACKAGING



MULTIPLE-USE TABLEWARE

WHAT'S BEST FOR PACKAGING? LET'S ASK THE ENVIRONMENT:

Reusing tableware seems intuitively better for the environment. Considering all impacts, however, this is often not the case, as demonstrated by certified and 3rd party reviewed comprehensive Life Cycle Assessment (LCA) study carried out by Ramboll, an independent Danish consultancy.

Single-use fibre-based packaging used in quick service restaurants for in-store use results in **very significant environmental benefits** over

its life cycle, from climate change to freshwater consumption. **In 6 of 9 categories**, including climate change and water usage, **single-use paper products perform significantly better than reusable tableware***. Beyond these benefits, paper is one of the few genuinely **renewable** materials, it does not need energy to be washed and dried, and unlike its reusable tableware alternatives, whether they are made of ceramic, glass or plastic.

LIFE CYCLE

At each step of its life cycle, single-use paper packaging offers a wide range of sustainability benefits over multiple-use tableware:



CLIMATE CHANGE

Single-use fibre-based packaging has a lower climate impact, producing far fewer carbon emissions across its life cycle compared to multi-use systems, which require large energy usage to wash and dry.

Single-use generates **2.8 times fewer CO₂ emissions** ↓

FINE PARTICULATE MATTER FORMATION

Fine particle pollutants released during fossil fuel combustion are a major source of health issues in modern society. Single-use systems can help to reduce the emission of these harmful particulates.

Single-use produces **2.2 times less fine particulate matter** ↓

FRESHWATER CONSUMPTION

Multiple-use systems need to be washed and dried in between uses, resulting in substantial water usage over time – water is increasingly scarce, particularly in the many arid and water-stressed regions of Europe.

Single-use consumes **3.4 times less freshwater** ↓

TERRESTRIAL ACIDIFICATION

Terrestrial acidification from acid rain, driven by energy use from washing and drying, is substantially reduced when using paper-based single-use systems.

Single-use decreases by **1.7 times** ↓

FOSSIL AND METAL RESOURCE DEPLETION

Paper is fully renewable, compared to plastics made from fossil fuels or ceramic and tableware glass produced from mined resources – fibre-based systems save substantial non-renewable resources.

Single-use depletes **3.3 times fewer metal resources** ↓

Single-use depletes **3.4 times fewer fossil resources** ↓

RECYCLING

Increasing the recycling rate of single-use paper-based tableware and packaging greatly increases the environmental benefits seen above.

When the recycling rate increases to 70%, the benefits of single-use paper-based systems improve drastically, particularly in freshwater consumption and fine particulate matter formation.

Single-use performs **7.1 times better in fine particulate matter formation** ↑

Single-use performs **228 times better in freshwater consumption** ↑

*Multiple-use systems perform better only in ionizing radiation (1.6 times fewer kBq Co-60 eq. to air) and freshwater eutrophication (4.8 times fewer kg P eq.), with only a minimal advantage for ozone depletion. Those results are issued from the comparison of a single-use paper set with a PP plastic one. Results are similar for a traditional ceramic, glass and metal tableware set, also tested. Find further details on the LCA study [here](#). The results represented here are updated August 2021 and are for the baseline scenario. The executive summary with the sensitivity analysis can be provided upon request – please contact us at mail@eppa-eu.org or visit <https://www.eppa-eu.org/>.